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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,024	12/20/2005	Mitsuru Sekiya	44471/324299	1311

23370 7590 09/24/2007
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EXAMINER

AURORA, REENA

ART UNIT	PAPER NUMBER
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2862

MAIL DATE	DELIVERY MODE
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09/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/595,024

Applicant(s)

SEKIYA, MITSURU

Examiner

Reena Aurora

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2 - 9 and 17 - 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2 - 9 and 17 - 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This communication is in response to RCE received on 09/12/07.

Claims 2 – 9 and 17 – 21 are presented for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 - 9 and 17 - 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oudet et al. (5,532,585) in view of Welsch et al. (2003/0137293).

As to claims 2 - 3, Oudet et al. (hereinafter Oudet) discloses a position sensor comprising a slider (12, fig. 1) having a magnet (3) having a front face along a longitudinal direction of the magnet that has one polarity and a back faces along the longitudinal direction of the magnet that has an opposite polarity; a stator (1) consisting of a magnetic body having a pair of opposed walls (4, 5) forming an area in which the slider (12) enters while keeping a predetermined clearance, the opposed walls (4, 5) corresponding to the front and back faces of the magnet (3); a magnetically-sensitive sensor (7) provided in the stator (4) to detect a position of the slider (12) corresponding to a percentage of the magnet (3) entering the area. Oudet fails to show a magnetic flux leakproof member for preventing magnetic flux, which is generated in a

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part of the magnet that does not enter the area, from leaking out to the stator. Welsch et al. (hereinafter Welsch) discloses a path sensor comprising a magnetic flux leakproof member (2) for preventing magnetic flux, which is generated in a part of the magnet (6) that does not enter the area (4), from leaking out to the stator. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oudet in view of the teachings of Welsch such that providing a magnetic flux leakproof member to prevent the leakage of magnetic flux would increase the efficiency of the device.

As to claims 4 –6, Oudet et al. (hereinafter Oudet) discloses a position sensor comprising a non-contact position sensor comprising: a slider (12) having a magnet (3) having a front face along a longitudinal direction of the magnet that has one polarity and a back face along the longitudinal direction of the magnet that has an opposite polarity; a main stator (1) consisting of a magnetic body having a pair of opposed walls (4, 5) forming an area in which the slider enters while keeping a predetermined clearance, the opposed walls (4, 5) corresponding to the front and back faces of the magnet (7), and a first gap (2) continuing into the opposed walls (4, 5); a magnetically-sensitive sensor (7) arranged in the first gap to detect a position of the slider (12) corresponding to a percentage of the magnet (3) entering the area. Oudet fails to show an assist stator for preventing magnetic flux, which is generated in a part of the magnet that does not enter the area, from leaking out to the main stator. Welsch et al. (hereinafter Welsch) discloses a path sensor comprising an assist stator (2) for preventing magnetic flux, which is generated in a part of the magnet that does not enter the area, from leaking out

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to the main stator (3) (fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oudet in view of the teachings of Welsch such that providing a magnetic flux leakproof member or assist stator to prevent the leakage of magnetic flux would increase the efficiency of the device.

As to claims 7 – 9, Oudet discloses a position sensor comprising a slider (12) having a magnet (3) having a front face along a longitudinal direction of the magnet that has one polarity and a back face along the longitudinal direction of the magnet that has an opposite polarity; a main stator (1) consisting of a magnetic body having a pair of opposed walls (4, 5) forming a first area in which the slider enters while keeping a predetermined clearance, the opposed walls (4, 5) corresponding to the front and back faces of the magnet (3), and a first gap (2) continuing into the opposed walls and a magnetically-sensitive sensor (7) arranged in the first gap of the main stator (1) to detect a position of the slider corresponding to a percentage of the magnet (3) entering the first area of the main stator (1). Oudet fails to show an assist stator arranged at a second gap intersecting with a moving direction of the slider from the main stator, the assist stator consisting of a magnetic body having a pair of opposed walls forming a second area allowing the slider to move while keeping a predetermined clearance. Welsch et al. (hereinafter Welsch) discloses a path sensor comprising an assist stator (2) arranged at a second gap intersecting with a moving direction of the slider (6) from the main stator (3), the assist stator (2) consisting of a magnetic body having a pair of

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opposed walls forming a second area allowing the slider to move while keeping a predetermined clearance (fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oudet in view of the teachings of Welsch such that providing a magnetic flux leakproof member or assist stator to prevent the leakage of magnetic flux would increase the efficiency of the device.

As to claims 17 – 18, Oudet discloses a position sensor comprising a slider (12) consisting of a pair of magnets (3) whose side edges along a moving direction of the slider are joined to each other and each of which has a front face along a longitudinal direction of the magnet that has one polarity and a back face along the longitudinal direction of the magnet that has an opposite polarity and an armature (12) provided on one side face of the pair of magnets; a main stator (1) consisting of a magnetic body arranged in a position opposing the other side face of the pair of magnets; a magnetically-sensitive sensor (7) provided in the main stator (1) to detect a position of the slider (12) corresponding to a percentage of the magnets (3) entering an area where the slider opposes the main stator. Oudet fails to disclose an assist stator consisting of a magnetic body for preventing magnetic flux, which is generated in parts of the magnets that do not enter the area, from leaking out to the main stator, wherein the main stator and the assist stator are arranged at a same side of the slider. Welsch et al. (hereinafter Welsch) discloses a path sensor comprising an assist stator (2) consisting of a magnetic body for preventing magnetic flux, which is generated in parts of the magnets that do not enter the area, from leaking out to the main stator, wherein the

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main stator (3) and the assist stator (2) are arranged at a same side of the slider (6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oudet in view of the teachings of Welsch such that providing a magnetic flux leakproof member or assist stator to prevent the leakage of magnetic flux would increase the efficiency of the device.

As to claims 19 – 21, Oudet discloses that the magnetically-sensitive sensor (7) is provided in a direction perpendicular to a moving direction of the slider (12).

Response to Arguments

Applicant's arguments with respect to claims 2 – 9 and 17 - 21 have been considered but are moot in view of the new ground(s) of rejection.

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Oudet et al. (6,518,749) is cited for its disclosure of a magnetic position sensor.

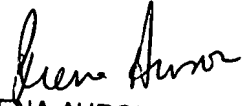
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reena Aurora whose telephone number is 571-272-2263. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, P. Assouad can be reached on 571-272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Reena Aurora


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